# Course Specifications

**University:** Benha University  
**Faculty:** Benha Faculty of engineering

## Course specifications

<table>
<thead>
<tr>
<th>Programme(s) on which the course is given</th>
<th>Mechanical Engineering</th>
</tr>
</thead>
<tbody>
<tr>
<td>Major or minor element of programmes</td>
<td>Manufacturing Technology</td>
</tr>
<tr>
<td>Department offering the programme</td>
<td>Mechanical Engineering</td>
</tr>
<tr>
<td>Department offering the course</td>
<td>Mechanical Engineering</td>
</tr>
<tr>
<td>Academic year / Level</td>
<td>2nd semester, senior level</td>
</tr>
</tbody>
</table>

## A- Basic Information

**Title:** Production Management  
**Code:** M 454  
**Credit Hours:** 4  
**Lecture:** 3  
**Tutorial:** 1  
**Practical:** 1  
**Total:** 4

## B- Professional Information

1 - Overall aims of course

By the end of this course, students will be able to develop an in-depth understanding of the scope and framework of the production and operations management area and the relevant concepts, models, techniques, and tools, in a way that enables them to develop appropriate analytical skills to define the production and operations management problems and utilize the suitable models and techniques with a practical perspective.

2- Intended learning outcomes of course (ILOs)

**a. Knowledge and understanding:**

- a.1 Define the scope of production management area and its subareas
- a.2 Identify the differences between management levels and the roles of each level
- a.3 Describe the common problems a production manager must address in day to day operation of a system
a.4 Describe the common production management analytical models and their applicability
a.5 Explain the limitations of commonly used production management models in the various decision making situations

b. Intellectual skills
b.1 Relate the production management models and techniques to the common decision making situations facing production managers
b.2 Analyze production management problems for the purpose of developing quantitative models of them
b.3 Comprehend the interactions between the various production management subsystems
b.4 Develop a perspective of the roles of data and information in production management
b.5 Suggest areas of performance improvement in production systems

c- Professional and practical skills
c.1 Analyze the components of the production system and evaluate the sufficiency of resources
c.2 Manage the resources efficiently to meet production goals
c.3 Assess system and subsystems performance
c.4 Collect and manage data for the common production management problems
c.5 Select the appropriate quantitative models to deal with the production management problems
c.6 Utilize computer in problem analysis, modeling, and solving
c.7 Predict future performance based on current working conditions and act appropriately
c.8 Communicate with people at the different level of management

d- General and transferable skills
d.1 Work in groups guiding workers and work teams
d.2 Write technical reports and conduct presentation
3- Contents

<table>
<thead>
<tr>
<th>Topic</th>
<th>Total No. of Hours</th>
<th>Lecture</th>
<th>Tutorial Practical</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction to production/operations management</td>
<td>3</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>Decision theory</td>
<td>10</td>
<td>6</td>
<td>4</td>
</tr>
<tr>
<td>Forecasting and time series analysis</td>
<td>10</td>
<td>6</td>
<td>4</td>
</tr>
<tr>
<td>Aggregate production planning</td>
<td>10</td>
<td>6</td>
<td>4</td>
</tr>
<tr>
<td>Short term scheduling</td>
<td>5</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Inventory management and control</td>
<td>10</td>
<td>6</td>
<td>4</td>
</tr>
<tr>
<td>Product, process, human resources strategy</td>
<td>5</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Working measurement</td>
<td>10</td>
<td>6</td>
<td>4</td>
</tr>
<tr>
<td>Maintenance and reliability</td>
<td>5</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Supply chains and current trends</td>
<td>5</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>72</strong></td>
<td><strong>45</strong></td>
<td><strong>28</strong></td>
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</table>

4– Teaching and learning methods

4.1 Lectures and Discussion Sessions
4.2 Internet / Library Search
4.3 Projects and Case Studies
4.4 Software Application

5- Student assessment methods

5.1 Written exams to assess ILOs a1, a2, a3, a4, b1, b2, b3, b5, c1, c2, c3, c5, c7
5.2 Quizzes to assess ILOs a2, a3, a5, b2, b3, b5, c3, c5, c8
5.3 Oral exam to assess ILOs a1 through d2 less c6
5.4 Homework to assess ILOs a1 through d2
5.5 Term project to assess ILOs a1 through d2

Assessment schedule

Written exams Week 10 (midterm) and the final exam
Quizzes Weeks 3, 6, 9, 12, 15
Oral exam Week 15
Homework Weekly
Term project assigned week 10 and submitted week 15

### Weighting of assessments

<table>
<thead>
<tr>
<th>Assessment</th>
<th>Weighting</th>
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</thead>
<tbody>
<tr>
<td>Mid-term examination</td>
<td>15 %</td>
</tr>
<tr>
<td>Final-term examination</td>
<td>60 %</td>
</tr>
<tr>
<td>Oral exam</td>
<td>5 %</td>
</tr>
<tr>
<td>Case study</td>
<td>10 %</td>
</tr>
<tr>
<td>Semester work</td>
<td>10 %</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>100 %</strong></td>
</tr>
</tbody>
</table>

### 6- List of references

6.1- Course notes
- Notes by instructor distributed in class

6.2- Essential books (text books)

6.3- Recommended books

6.4- Periodicals, Web sites, … etc
The association for Operations Management [http://www.apics.org/default.htm](http://www.apics.org/default.htm)

### 7- Facilities required for teaching and learning

- Appropriate teaching class accommodations including presentation board and data show.
- Computer Lab for software use

Course coordinator: Dr. Magdy Helal

Head of Department:

Date: / /